

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A ~~value document having a machine -readable authenticity mark , characterized in that~~ that is a component of a security element for securing an object of value, a component of a value document, or a component of a security paper for producing security or value documents, said authenticity mark comprising:

~~the authenticity mark comprises~~ a luminescent marking substance that emits~~[[ting]]~~ light in the infrared spectral range; ~~[[,]]~~ and

an absorbing marking substance that absorbs~~[[ing]]~~ light in the infrared spectral range;

wherein the luminescent marking substance is excitable in the infrared spectral range and emits in the absorption range of the infrared absorbing marking substance.

2-3. (Cancelled)

4. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the infrared absorbing marking substance is essentially colorless or has only weak inherent color in the visible spectral range.

5. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the infrared absorbing marking substance significantly absorbs in the spectral range between about 1200 nm and about 2500 nm.

6. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the infrared absorbing marking substance has no significant absorption at a wavelength of about 800 nm.
7. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the infrared absorbing marking substance comprises a doped semiconductor material or a metal oxide.
8. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the infrared absorbing marking substance is present in particle form with an average particle size smaller than 50 μm .
9. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the luminescent marking substance is formed on the basis of a host lattice doped with a rare earth metal.
10. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the luminescent marking substance and the infrared absorbing marking substance are formed by substances incorporated into the value document, security element or security paper or applied to the value document, security element or security paper separately from each other.
11. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the luminescent marking substance and the infrared absorbing marking substance are incorporated into the value document, security element or security paper or applied to the value document, security element or security paper jointly as a mixture of substances.

12. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the luminescent marking substance is incorporated into the value document, security element or security paper or applied to the value document, security element or security paper all over.

13. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the value document, security element or security paper comprises a substrate, into whose volume the luminescent marking substance is incorporated.

14. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the infrared absorbing marking substance is applied to the value document, security element or security paper.

15. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the arrangement of the infrared absorbing marking substance represents information.

16. (Currently Amended) The authenticity mark ~~value document~~ according to claim 15, characterized in that the information is present encrypted.

17. (Currently Amended) The authenticity mark ~~value document~~ according to claim 16, characterized in that the luminescent marking substance and the infrared absorbing marking substance are present in overlapping areas of the value document, security element or security paper.

18. (Currently Amended) The authenticity mark ~~value document~~ according to claim 17, characterized in that the value document, security element or security paper has a printed layer which partly or completely covers the areas of the value document,

security element or security paper provided with the infrared absorbing marking substance.

19. (Currently Amended) The authenticity mark ~~value document~~ according to claim 18, characterized in that the printed layer is opaque in the visible spectral range and is transparent or translucent in the absorption range of the infrared absorbing marking substance.

20. (Currently Amended) The authenticity mark ~~value document~~ according to claim 18, characterized in that the printed layer is opaque in the emission range of the luminescent marking substance.

21. (Currently Amended) The authenticity mark ~~value document~~ according to claim 18, characterized in that the printed layer is applied by an intaglio printing technique.

22. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the machine-readable authenticity mark is formed over a large area .

23. (Currently Amended) The authenticity mark ~~value document~~ according to claim 1, characterized in that the infrared absorbing marking substance and/or the luminescent marking substance is incorporated in the authenticity mark with a coverage of 30% or more.

24. (Cancelled)

25. (Currently Amended) The authenticity mark ~~security element~~ according to claim 1, being a component of a security element ~~characterized in that it is~~ which is disposed detachably on a carrier layer.

26. (Currently Amended) The authenticity mark-security element according to claim ~~[[24]]1[[.]]~~ being a component of a security element characterized in that it ~~which is~~ formed as a label, seal, transfer band, sleeve or other flat transfer element.

27. (Cancelled)

28. (Currently Amended) A method for checking the authenticity of a machine-readable authenticity mark for use on a value document, security element, or security paper, the authenticity mark comprising a machine readable authenticity mark comprising a luminescent marking substance that emits light in the infrared spectral range, and an absorbing marking substance that absorbs light in the infrared spectral range, wherein the luminescent marking substance is excitable in the infrared spectral range and emits in the absorption range of the infrared absorbing marking substance, said method comprising ~~value document, according to claim 1, or a security element in said value document or a security paper encompassing said value document, characterized by the following steps:~~

- irradiating the machine-readable authenticity mark with infrared radiation from the excitation range of the luminescent marking substance;~~[[.]]~~
- determining the emission of the authenticity mark at a wavelength from the emission range;~~[[.]]~~ and
- evaluating the authenticity of the value document, security element or security paper on the basis of the determined emission.

29. (Previously Presented) The method according to claim 28, characterized in that the determination of the emission is carried out in spatially resolved fashion.

30. (Previously Presented) The method according to claim 28, characterized in that the emission of the authenticity mark is determined on two opposite sides of the value document, security element or security paper.

31. (Previously Presented) The method according to claim 30, characterized in that the authenticity evaluation is carried out on the basis of a comparison of the emission from the opposite sides.

32. (Cancelled).

33. (Currently Amended) The method according to claim ~~[[32]]~~28, characterized in that the absorption of the authenticity mark is determined via a measurement of the transmitted and/or remitted infrared radiation.

34. (Cancelled)

35. (Currently) The method according to claim ~~[[34]]~~28, characterized in that the determination of the absorption is carried out in spatially resolved fashion.

36. (Previously Presented) The method according to claim 28, characterized in that the absorption of the authenticity mark is determined additionally at a wavelength from the visible spectral range for authenticity testing.

37. (Previously Presented) The method according to claim 28, characterized in that the irradiation is carried out with a light-emitting diode or a laser diode.

38. (Previously Presented) The method according to claim 28, characterized in that the arrangement of the infrared absorbing marking substance represents information, which is read by determining the absorption or emission and used for authenticity

testing.

39. (Previously Presented) The method according to claim 38, characterized in that the information comprises the denomination, the currency, the emission date, the country, the printing works or special features of the value document, security element or security paper, whereby one or more of the stated pieces of information are read and processed further in authenticity testing.

40. (Currently Amended) An apparatus for checking the authenticity of a machine-readable authenticity mark, said authenticity mark comprising a luminescent marking substance that emits light in the infrared spectral range, and an absorbing marking substance that absorbs light in the infrared spectral range, wherein the luminescent marking substance is excitable in the infrared spectral range, carrying out the method according to claim 28, having said apparatus comprising:

means for irradiating the machine-readable authenticity mark with infrared radiation from the excitation range of the luminescent marking substance, wherein the luminescent marking substance emits in the absorption range of the infrared absorbing marking substance;

means for determining the emission of the authenticity mark at a wavelength from the emission range[.,,];

means for irradiating the machine-readable authenticity mark with infrared radiation from the absorption range of the infrared absorbing marking substance;

means determining the absorption of the authenticity mark at a wavelength from the irradiation range; and

means for evaluating the authenticity of the value document, security element or security paper on the basis of the determined emission and absorption.

Claims 41-42 (Cancelled)

43. (Previously Presented) The apparatus according to claim 40 in form of a money processing machine, a bank note counting machine, a bank note sorting machine, a bank note reading device for the blind or partially sighted, a bank note reading device for dealings in foreign currency, or a pocket-size bank note testing device.
44. (Canceled)
45. (Currently Amended) The authenticity mark-~~value document~~ of claim 1 wherein the luminescent marking substance emits at a wavelength λ of 880 nm.
46. (Currently Amended) The authenticity mark-~~value document~~ of claim 1 wherein said luminescent marking substance emits at a wavelength above about 1100 nm.
47. (Currently Amended) The authenticity mark-~~value document~~ of claim 46 wherein said wavelength is above about 1200 nm.
48. (Currently Amended) The authenticity mark-~~value document~~ of claim 1 [[3]] wherein said spectral range is from about 800 nm to about 1000 nm.
49. (Currently Amended) The authenticity mark-~~value document~~ of claim 13 wherein said substrate is a paper substrate.
50. (Currently Amended) The authenticity mark-~~value document~~ of claim 14 wherein the infrared absorbing marking substance is printed on the value document.
51. (Currently Amended) The authenticity mark-~~value document~~ of claim 15 wherein said information comprises patterns, signs or codings.
52. (Currently Amended) The authenticity mark-~~value document~~ of claim 51 wherein said information comprises a barcode.

53. (Currently Amended) The authenticity mark~~-value document~~ of claim 22 wherein said area is a surface area of 100 mm² or more.

54. (Currently Amended) The authenticity mark~~-value document~~ of claim 53 wherein said surface area is 400 mm² or more.

55. (Currently Amended) The authenticity mark~~-value document~~ of claim 23 wherein said coverage is about 50%.

56. (Currently Amended) The authenticity mark~~-security paper~~ of claim 27 wherein said security or value documents comprise banknotes or identity cards.

57. (Currently Amended) The method of claim ~~[[38]]~~28 wherein said information comprises a barcode.